

**REMARKS**

Reconsideration and withdrawal of the objections to and the rejections of the application are respectfully requested in view of the remarks herewith, which place the application into condition for allowance.

**I. STATUS OF THE CLAIMS AND FORMAL MATTERS**

Claims 29-56 are now pending.

No new matter is added.

It is submitted that these claims, as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims are in full compliance with the requirements of 35 USC 112.

**II. THE ART REJECTIONS ARE OVERCOME**

Claims 29-56 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Choy et al. (WO 97/21848) in view of Blackwell et al. (U.S. Patent No. 6,312,656). Applicants respectfully disagree. The rejection is respectfully traversed. The cited documents do not teach, suggest or motivate a skilled artisan to practice the instantly claimed invention.

In order to ground an obviousness rejection, there must be some teaching which would have provided the necessary incentive or motivation for modifying the reference's teaching. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (B.P.A.I. 1993). Further, "obvious to try" is not the standard under 35 U.S.C. §103. *In re Fine*, 5 U.S.P.Q. 2d 1596, 1599 (Fed. Cir. 1988). And as stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification." Also, the Examiner is respectfully reminded that for the Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants' disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988).

In rejecting the claimed invention as unpatentable over the disclosures of Choy et al (WO-97/21848) when taken in combination with Blackwell et al (US-6312656), the Office

Action is relying on Blackwell *et al* as disclosing the generation of an annular flame combustion region.

The Office Action has acknowledged that Figure 4 of Blackwell *et al* illustrates a single, continuous flame combustion region (23), but is apparently alleging that the disclosure of Figure 4 incorrectly represents the flame combustion region (23). Specifically, the Office Action apparently alleges that fuel is delivered through an annular channel, namely, the outermost channel (47), and, as such, the flame combustion region (23) must necessarily be annular. It is submitted that this allegation has no basis.

It is acknowledged that Blackwell *et al* discloses the delivery of fuel through an annular outlet, this being the outlet defined by the outermost channel (47), but the outermost channel (47) is a frusto-conical channel and not a cylindrical channel. Blackwell *et al* makes no disclosure of the channels (43-47) being cylindrical channels as alleged by the Office Action, but rather that the channels (43-47) are concentric (column 9, lines 6 and 7). Concentricity merely defines that the channels (43-47) have a common center. The outermost channel (47), in being a frusto-conical channel, manifestly cannot provide for the generation of an annular flame combustion region as alleged in the Office Action. It is submitted that the Office Action is improperly employing a hindsight analysis of the prior art, but, even then, the combination of Choy *et al* and Blackwell *et al* does not provide the method or apparatus of the claimed invention.

In support of this allegation, the Office Action is relying on the disclosure at column 9, lines 17 to 20, which discloses that “An inert gas, ... is delivered through channel 44 to inhibit reaction of liquid feedstock and soot build-up on burner face 53.”. The Office Action considers this disclosure to support his allegation that the flame combustion region (23) is away from the burner face (53), and apparently in an annular region defined by the outermost channel (47). It is, however, submitted that this teaching referenced in the Office Action in fact contrarily demonstrates that the flame combustion region (23) extends across the burner face (53), particularly the central region thereof which includes the atomizer (41) from which feedstock is delivered. The purpose of delivering an inert gas through an inner channel, namely, inner channel (44), is expressly recited as being to “inhibit reaction of the liquid feedstock and soot build-up on burner face (53).”. It is submitted that such inhibition at the burner face (53) is required for the very reason that the flame combustion region (23) extends thereover, as,

otherwise, inhibition would be unnecessary, and, as such, and contrary to the Office Action's allegation, this disclosure is not to the development of an annular flame combustion region (23).

Indeed, Blackwell *et al* further discloses (column 8, line 67 to column 9, line 3) that the atomizer (41) "injects very finely atomized liquid reactant particles into flame 23.". For such injection to occur, the flame combustion region (23) has to extend over the atomizer (41), and, as such, the flame combustion region (23) cannot be annular as alleged by the Office Action.

Furthermore, Blackwell *et al* discloses (column 9, lines 13 to 17) that "The area proximate to the burner face 53 and flame 23 thus acts as a conversion site for converting liquid projections 42 into soot reactant particles.". As the liquid projections (42) are created at the outlet of the atomizer (41), and the flame combustion region (23) is required to act as the conversion site for converting the liquid projections (42) into soot reactant particles, and the conversion site is required to be proximate the burner face (53), the flame combustion region (23) manifestly has to extend over the atomizer (41), and, as such, cannot be annular as alleged in the Office Action. If the flame combustion region (23) were annular as alleged in the Office Action, the stated conversion of the liquid projections (42) would manifestly not occur proximate the burner face (53).

As such, it is submitted that the claimed invention is clearly distinguished over the disclosures of Choy *et al* when taken in combination with Blackwell *et al*.

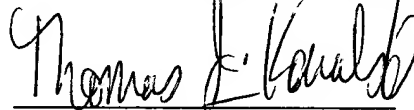
Consequently, the rejections under 35 U.S.C. §103 are improper; reconsideration and withdrawal of the rejections is respectfully requested.

**CONCLUSION**

In view of the remarks herewith and those of record, the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance, are earnestly solicited. The undersigned looks forward to hearing favorably from the Examiner at an early date.

Respectfully submitted,  
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